

Status Report on TMDL for Pathogens in Tomales Bay RWQCB

“Preliminary TMDL Report”

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California
Regional
Water
Quality
Control
Board

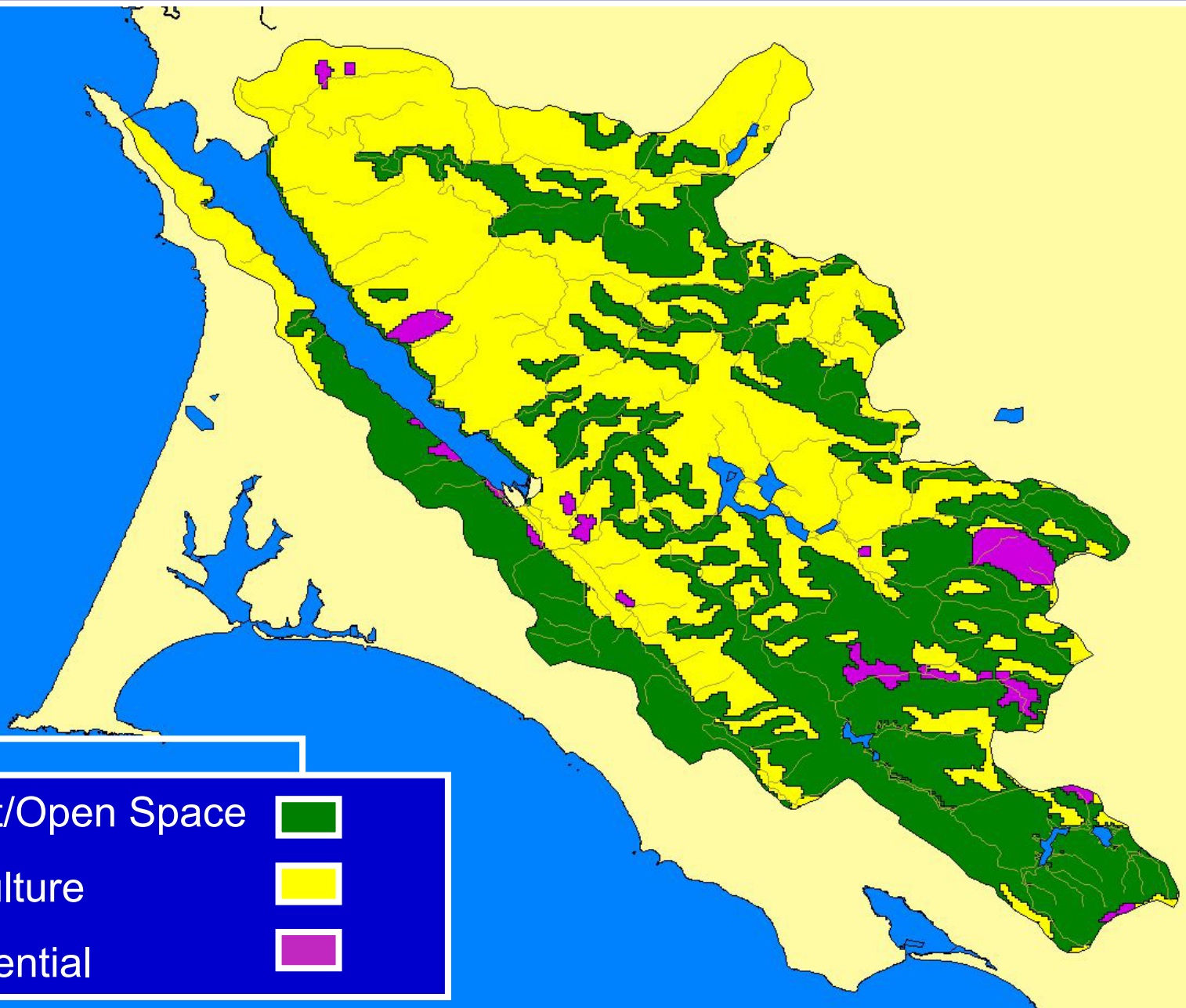
Region 2
Boundary



Tomales Bay Watershed



Tomales Bay Watershed Land Uses



Forest/Open Space



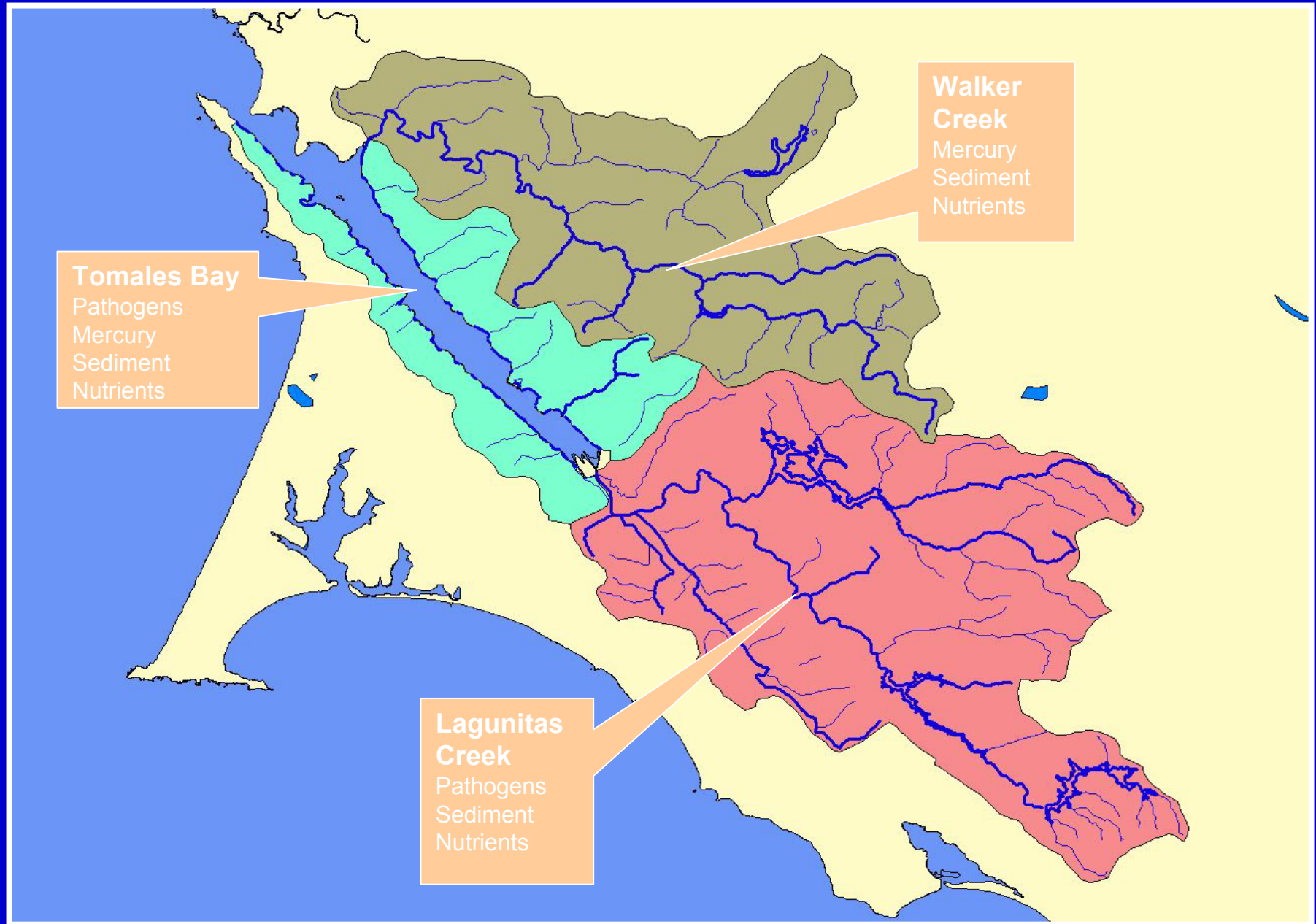
Agriculture

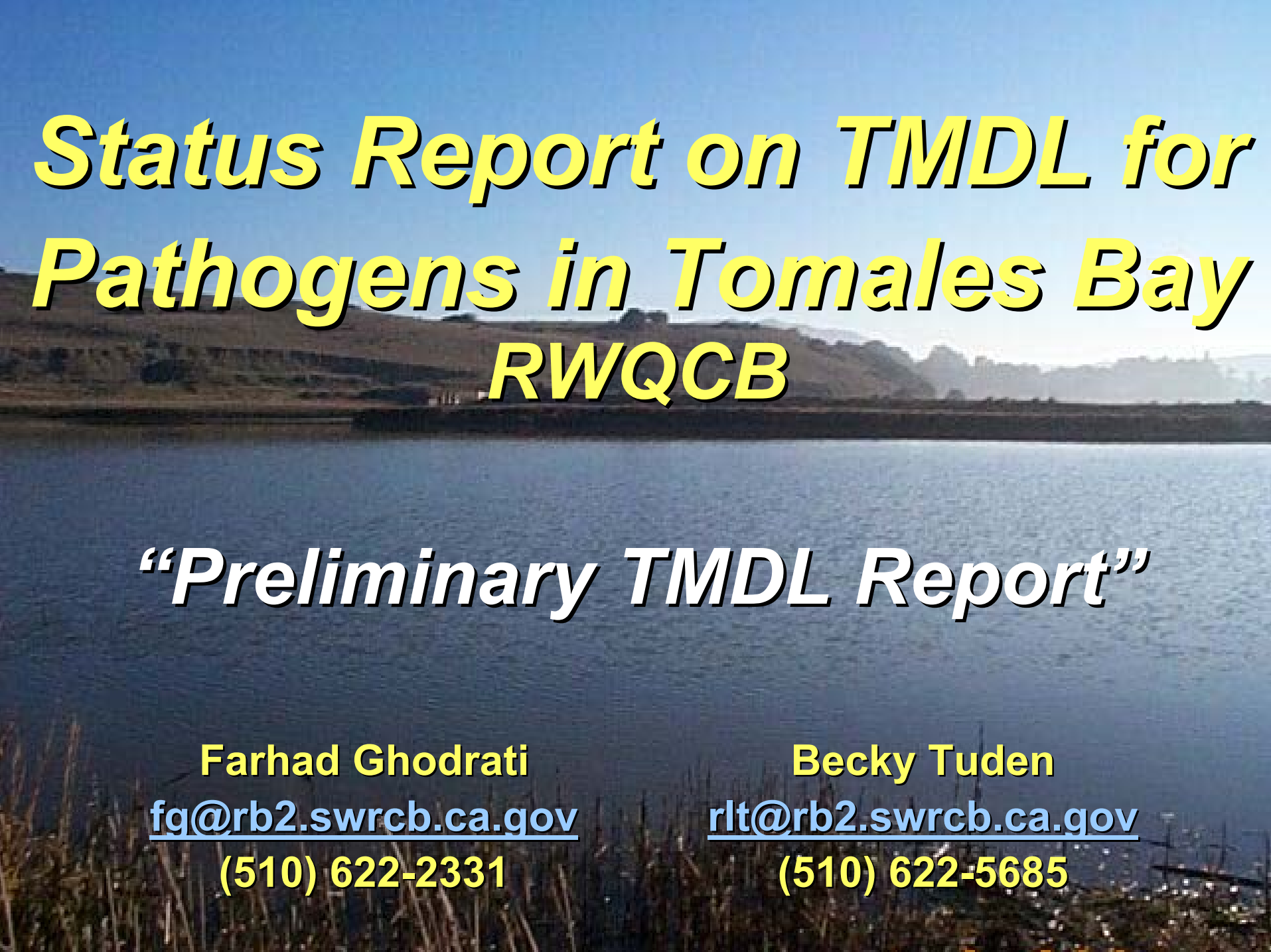


Residential



Tomales Bay Watershed Water Quality Concerns





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Preliminary TMDL Project Report: **(Important Milestone)**

- **Compiles results of efforts in developing TMDL**
- **Present our understanding of problems and potential solutions**
- **Provides opportunity for stakeholder feedback on:**
 - **Technical issues**
 - **Preliminary implementation plan**

Beneficial Uses of Bay Affected by Pathogens

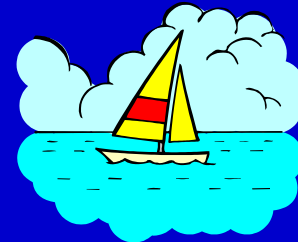
➤ Water contact recreation

➤ *Swimming, Bathing*



➤ Non-contact water recreation

➤ *Fishing, Boating*



➤ Shellfish harvesting (commercial and recreational)

➤ *Oysters, Clams, Mussels*



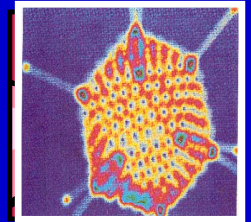
Why Is Tomales Bay Impaired?

1. **Exceeds** Basin Plan water quality objectives for pathogens (mostly during rainy season)
2. **Prohibition** on commercial shellfish harvesting during rainfall periods (enforced by DHS)
3. **Illness outbreak** (1998) due to consumption of contaminated shellfish (affecting 171 people)

What Are Pathogens?

Parasites capable of causing disease in their hosts

- **Waterborne** pathogens of fecal origin
- Comprised of 3 groups of microorganisms:
 - **Viruses**
(i.e., *Poliovirus*, *Hepatitis A*)
 - **Bacteria**
(i.e., *E.coli*, *Salmonella*)
 - **Protozoan**
(i.e., *Cryptosporidium*, *Giardia*)

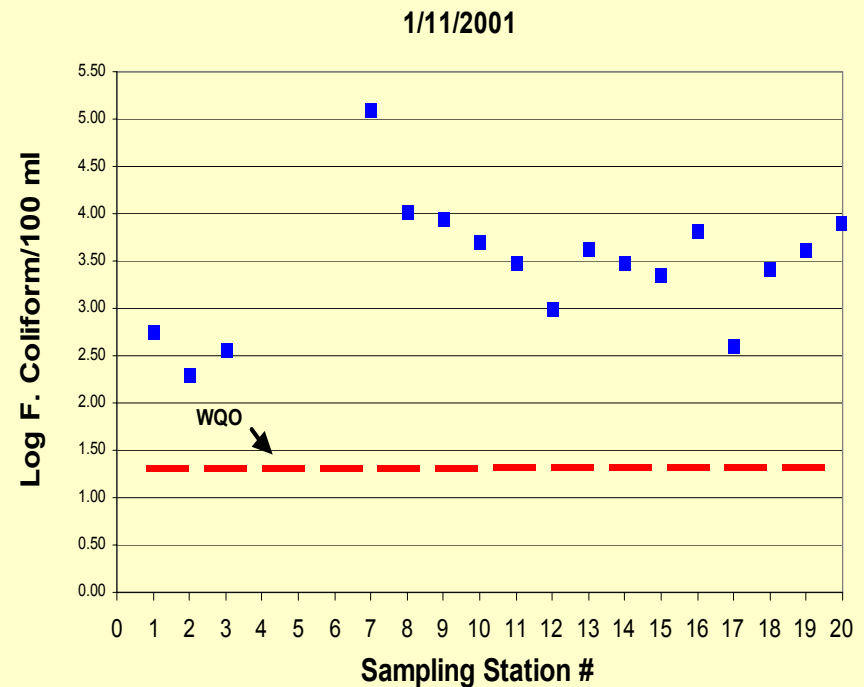


All Sampling Locations Exceed Water Quality Objectives During Wet Weather!

Sampling Stations



Monitoring Results

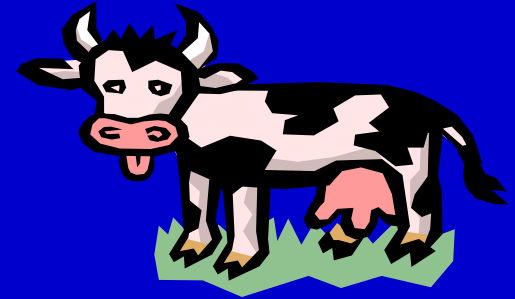


What Are Potential Pathogen Sources?

Animal Sources

1. Animal Agriculture:

- Dairies
- Horse farms
- Grazing lands



2. Residential Runoff (i.e., pet waste)

3. Wildlife

Human Sources

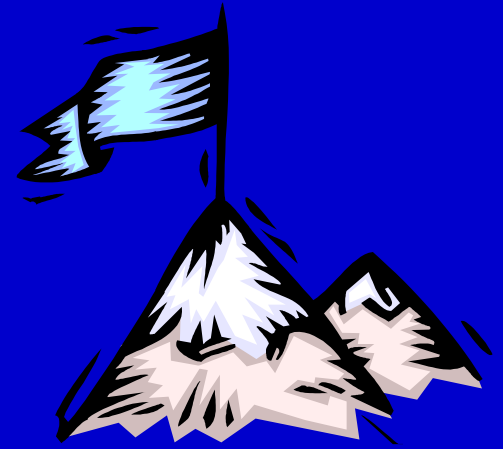
4. Faulty Onsite Sewage Disposal Systems (septic tanks)

5. Boat Discharges

6. Small Sewage Treatment Facilities



What is the Goal?



**To Reduce/Minimize The Risk of
Human Exposure to Disease-
Causing Pathogens**

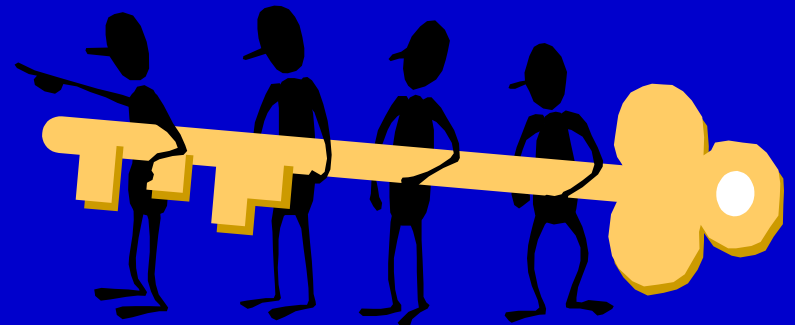
What are Proposed TMDL Targets?



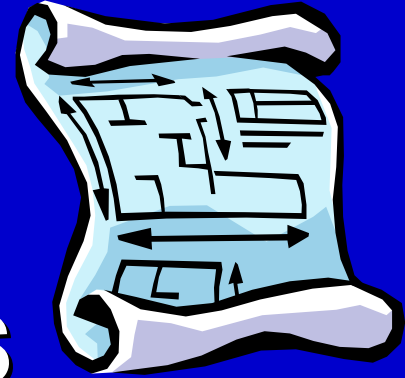
- 1. Basin Plan pathogens objectives for shellfish harvesting**
- 2. Basin Plan pathogens objectives for water contact recreation**
- 3. No discharge of human waste (Basin Plan Prohibition)**



Key To Success: ***Watershed Wide Partnership to*** ***Reduce/Eliminate Pathogen Discharges***



Implementation Plan :



- **SUPPORT ONGOING EFFORTS**
 - \$2 million in grant funds – Prop 13 and 319
 - Technical assistance, monitoring, & implementation support
- **PHASED APPROACH**
 - Recommends 6 years (to 2008) for implementation
- **MONITORING & INTERIM GOALS**

Phased Approach

All sources
completed
this phase

SOURCE ASSESSMENT
Identify potential sources



Residential Runoff
Ranches
Boaters
Equestrian facilities

PLAN DEVELOPMENT
Identify site-specific source control
Actions for each facility/area



Dairies
Septics
Small treatment facilities

PLAN IMPLEMENTATION
Implement BMPs/actions
identified in plan

Implementation Examples

**SOURCE ASSESSMENT
COMPLETED**

SEPTICS (County lead)

RANCHERS



**PLAN DEVELOPMENT
COMPLETED**

Risk Assessment, Education



PLAN IMPLEMENTATION

Inspect “high priority”
systems near creeks
Repair failing systems



PLAN DEVELOPMENT

Ranch assessment of sources
To be completed by Jan 2004

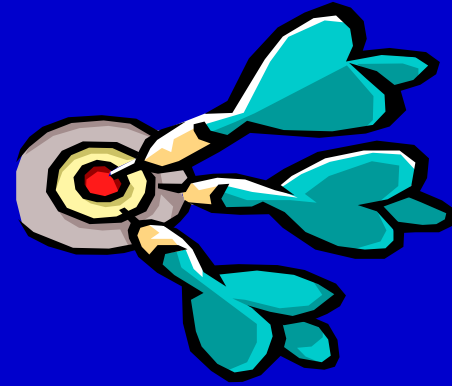


PLAN IMPLEMENTATION

Implement identified
tasks
e.g. riparian fencing,

Complete by 2008er troughs.

Monitoring & Interim Goals



Measure progress to ensure partnership works

- **30% reduction in Bay pathogen concentration by 2005**
- **75% reduction in Bay pathogen concentration by 2007**
- **Monitoring to determine Best Management Practices implementation and effectiveness**

Next Steps:



- **Preliminary TMDL Report available on website:**
http://www.swrcb.ca.gov/rwqcb2/agenda_nov_02.htm
- **Meetings with each stakeholder group (Nov 2002 – Mar 2003)**
- **Final TMDL Report (Summer 2003)**
- **Draft Basin Plan Amendment (Fall 2003)**

